TRENDING SYSTEM AND METHOD USING WINDOW FILTERING

ABSTRACT OF THE DISCLOSURE

A trending system and method for trending data in a mechanical system is provided. The trending system includes a sliding window filter. The sliding window filter receives a data set of data points generated by the mechanical system. The sliding window filter partitions the data set into a plurality of data windows, and uses the data windows to calculate upper and lower confidence bounds for the data set. Specifically, the sliding window filter calculates an upper confidence bounds and lower confidence bounds for each data point using each of the multiple data windows that includes the data point. The sliding window filter then selects the upper confidence bounds and the lower confidence bounds that results in the smallest mean prediction confidence interval for that data point. This results in a smoothed estimated trend for the data set that can be used for prognostication and fault detection.